Critical Thinking in Environmental Science
EVS 4021 Class# 12754 (3 credit hours) – Fall 2025
M periods 8-9 (3:00 – 4:55), W period 9 (4:05 – 4:55)
Classroom: Rinker Hall room 106

Syllabus

Instructor: Dr. Ryan Good, Instructional Assistant Professor
Email: ryangood@ufl.edu
Office Location: McCarty D, Room 2049
Drop-in office hours: T 9:00 – 10:00, W 2:00 – 3:00, or by appointment

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Office Location: McCarty D, Room 2053
Drop-in help hours: T 10:00am – 12:00pm, W 11:00am – 1:00pm, or by appointment

We are here for you! Please don't hesitate to ask us for assistance!

Catalog Description
Develops critical thinking and communication skills in the practicing environmental scientist. Students analyze the strengths, limitations and strategies of arguments regarding environmental science, policy and management, and craft arguments consistent with the scientific method.

Prerequisites
EVS_BA or EVS_BS, senior standing

Place in Curriculum
This is the required capstone course for the B.A. and B.S. major in Environmental Science. By the senior year, Environmental Science majors have acquired comprehensive knowledge in the science and policy tracks and are ready to explore implications of what has been learned, confront conflicts in classical paradigms, and apply knowledge and skills to real-world and emerging problems.

Student Learning Outcomes
By the end of the semester, you will be able to:
1. Appraise and hone your thinking in scientific matters: being able to clearly formulate questions; evaluate evidence; detect assumptions and gaps in data; notice when evidence is ignored; recognize appropriate support from or excessive reliance on conceptual generalizations (theory); ascertain and acknowledge biases driven by beliefs, worldviews, or preferences; weigh the validity of conclusions based on the strength or weakness of evidence; be more willing to discard positions for which there is little or contrary evidence; assign degrees of likelihood to conclusions you are willing to accept and advocate; and prepare to challenge and refute problematic arguments.
2. Internalize the scientific process and examine how you invoke it in your real-time thinking.
3. Formulate and present strong, logical, science-based arguments and evaluate and discuss arguments made by others.

4. Integrate prior knowledge of how biophysical systems work to better understand the constraints and opportunities for natural-resource and environmental management.
5. Evaluate the crucial role of social processes, communities, and institutions in effective natural-resource and environmental management.
6. Develop habits of disciplined thinking applicable to topics in the natural and social sciences.

Course Structure
EVS4021 is an in-person discussion-based course with three contact hours per week. We will aim to integrate three complementary aspects of scholarship:
   a. Furthering your understanding of environmental science as an integrative, interdisciplinary endeavor, and what that means in practice.
   b. Furthering your ability to link and trade-off between the social and the ecological domains of human activities and pursuits.
   c. Exploring the impacts of ongoing research upon pressing environmental concerns and related management and policy paradigms.

To explore these items, we will take an interactive approach loosely inspired by Socratic discussion principles. In other words, students will take turns designing presentations and leading discussions, while the remaining students take active roles in putting forth ideas, well-informed opinions, and comments during class among each other under the guidance of the instructor. A typical class period will consist of two or more presentations by students, sometimes prefaced by instructor commentary. The instructor and TA will deliver students clear guidelines and rubrics for the selection of papers, mode of presentation, and discussions involved during the course, as well as providing adequate and timely feedback on students' performance.

Attendance and informed discussion are essential; students who attend classes, come prepared by reading the material, present effectively, and participate positively in class discussion should do very well.

The topics we will discuss depend on the unique interests of this semester's cohort of students. Possible examples include:

- The role(s) of a scientist in the modern world
- Issues pertaining to environmental quality, including air, water, and soil pollution and contamination
- Climate change, its impacts, adaptation, mitigation, and socio-cultural dimensions
- Energy systems, including the "green energy" transition, and the roles of geoengineering, nuclear power and new products from the fossil fuel industry in that transition
- Urban, suburban, and exurban growth patterns and their implication
- Agriculture, food, & patterns of consumption
- Environmental Management & Policy

Textbooks and readings

There is no required textbook for this course. Much of our discussion will revolve around peer-reviewed scientific literature selected by students, but we will complement this with pre-print articles, well-written book chapters, editorials, news reports, and audio/video materials. These will be made available through Canvas.

Acknowledgment and Disclaimer
The previous instructor of this course, Dr. Porzecanski, has decades of lived experience in many of the topics we will be exploring. Due to his retirement, you will miss out on his illuminating real-world examples and his style of facilitating discussion through challenging, multidimensional questions. This syllabus mirrors Dr. Porzecanski's closely, and I acknowledge that much of its content is taken verbatim or in modified form from his syllabus for this class. Portions of the syllabus are also derived in some fashion from Dr. Coenen, who has on occasion taught the class.

Assessment of Student Learning

Grading is based on assignment-specific rubrics provided on Canvas and the student learning objectives listed in the syllabus. It is your responsibility to ensure that all assignments are successfully uploaded to Canvas. <u>Missing, corrupt, or incompatible files may result in grade penalties up to a score of zero for the assignment</u>. You are responsible for maintaining duplicate copies of all work submitted in this course until the end of the semester.

<u>In case of a grading dispute, you must notify your me by email within one week of the date the grade is posted to Canvas</u>. Please include an explanation of what aspect of your grade you disagree with. End-of-semester requests for grade bumps, assignment do-overs, additional extra credit, etc. will be denied. Please do not wait until the end of the semester to discuss problems with the course material or your performance in class. Your well-being and success are important to me, SNRE, the College of Agricultural and Life Sciences, and the University of Florida, so please contact me to discuss any concerns as soon as they arise.

Information on current UF grading policies for assigning grade points can be found at https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/.

Grading scale

Grade	Points	Percent	Grade	Points	Percent
A:	> 930.0	> 93.0%	C:	730.0 to < 770.0	73.0 to < 77.0%
A-	900.0 to < 930.0	90.0 to < 93.0%	C-	700.0 to < 730.0	70.0 to < 73.0%
B+:	870.0 to < 900.0	87.0 to < 90.0%	D+:	670.0 to < 700.0	67.0 to < 70.0%
B:	830.0 to < 870.0	83.0 to < 87.0%	D:	630.0 to < 670.0	63.0 to < 67.0%
B-	800.0 to < 830.0	80.0 to < 83.0%	D-	600.0 to < 630.0	60.0 to < 63.0%
C+:	770.0 to < 800.0	77.0 to < 80.0%	E:	< 600.0	< 60.0%

Your final grade for this course will be based on a 1000-point scale and will be weighted as follows:

Grade Component	Points	Percentage
Engagement	200	20.0%
Presentations	300	30.0%
Exam 1	200	20.0%
Exam 2	200	20.0%
Seminar report 1	50	5.0%
Seminar report 2	50	5.0%
Total	**1000**	**100%**

Engagement*:* EVS4021 is a discussion-based class. Therefore, actively engaging in the course is a prerequisite for success and achieving the student learning outcomes. Please arrive on time and be prepared to contribute. Your engagement grade is based on the quantity and quality of your contributions to formal and informal in-class discussions and activities. Repeated unexcused absences, inappropriate or disruptive classroom behavior, and lack of active participation will result in a reduction of your engagement grade (see Course Policies for additional details).

Presentations*:* Each student will do multiple original presentations for EVS4021 this semester (likely 2-3, exact number will be dependent on the course's final enrollment total). They should be well-designed and rehearsed, backed up by attractive and engaging slides that provide relevant context or additional detail, and reference multiple credible sources. The narration should not duplicate but rather complement the information on the slides.
Presentations will have varying lengths, posted on individual assignment guidelines on Canvas. Some presentations will require students to identify a topic and/or a reading for the class ahead of time. In these instances, students must submit a proposed topic for approval no later than 8 calendar days prior to their scheduled presentation. Students scheduled to present on Mondays must select and send to the instructor a high-quality reading assignment for dissemination to the class no later than midnight on the preceding Tuesday. Students scheduled to present on Wednesday must select their reading assignment no later than the preceding Thursday. Their final slides should be made available no later than noon on the day of the presentation.

Exams*:* Students will complete two take-home essay exams during the semester. Each will contain 2-3 prompts, of which you will choose 1-2 (depending on prompt complexity) to answer in the form of research papers totaling between 1500 and 2000 words in length, *not including references*. Prompts may ask you to further analyze material presented in the course, explore current or emerging environmental issues or news coverage, "wicked problems", or the interface between environmental science and society at large (among others). You will search the library and other data sources for a complete and up-to-date understanding of the subject, the current issues it presents to society, and proposed solutions and their prospects. Peer-reviewed articles and other references must be cited/referenced appropriately using APA 7th edition format. The essay should contain original conclusions backed by substantial evidence. Exam essays must be completed individually without the help or input of others.

Seminar Reports*:* During the first month of class, you will attend two in-person seminars on campus. No Zoom seminars, please! One must be part of SNRE's departmental seminar series (unless another course in which you are enrolled conflicts – let me know by email no later than the second week of class if this is the case). The other can be part of any UF seminar series of your choice. As you watch the seminar, you will pay special attention to the presenter's style, including the way they structure the presentation, the design of their presentation materials, how they engage (or fail to engage) the audience, how they respond to audience questions, etc. You will then submit a brief review of each seminar that should include at least two things you learned in terms of the presented content, and two things the presenter did well (or poorly) that you can apply to your own presentation skills in this class and beyond. These submissions are reflections up to 500 words in length.

University of Florida Academic Policies

Please visit https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/ for the latest academic policies.

Course Policies

Non-Discrimination Policy
The SNRE faculty strongly support University of Florida regulation 1.006 on non-discrimination and Board of Governors regulation 2.003 on equal access and opportunity. This classroom is a place where you are valued and will be treated with respect. All members of this class are expected to contribute to a respectful and welcoming environment for every other member of the class. This does not mean that you are not allowed to disagree with others, but that such differences should be explored without *ad hominem* judgment. Considering different perspectives enriches our understanding of the variety of human-nature interactions and is imperative to developing just solutions to complex environmental problems.

Your instructor may utilize teaching tools such as "playing devil's advocate" or "putting yourself in the shoes of others" from time to time. Pursuant Florida Statute 760.10(8)(b), such pedagogical strategies should not be misconstrued as an *endorsement* of any position in conflict with Florida Statute 760.10(8)(a). Should I inadvertently make a statement offensive to you, please let me know so that I may learn and grow from the incident.

Make-up Policy
To maintain fairness, only work missed due to excused absences can be made up. For absences excused ahead of time, I will develop a make-up plan. In case of documented illnesses or emergencies, arrangements for completing make-up exams or assignments should be made upon your return to class. If experiencing truly extenuating circumstances resulting in longer absences, you should let me know as soon as possible. If you miss an exam for a non-excusable reason, a score of zero will be entered. Unfortunately, we are unable to accept assignment do-overs (resubmissions for a higher score) in this class. Missed extra credit opportunities cannot be made up.

Late Work
You are responsible for turning assignments in on time unless an extension has been requested by email prior to the deadline. In case of true documented emergencies, I may waive this requirement. Technical difficulties are not generally an excuse for missing an assessment or assignment; you should have contingency plans in case any such issues arise. I recommend storing your documents on a cloud service that can be accessed from any device (OneDrive is free for UF students), and having a plan for internet outages (such as identifying a source for public Wi-Fi near you or using your cell phone as a Wi-Fi hotspot). Try not to wait until the last minute to submit assignments!

Assignments submitted between one and four days late will incur a penalty of 10% of the possible points per day. Work submitted more than four days late will be assigned a score of zero. I highly recommend starting on assignments early to preclude unexpected emergencies or late-semester stress from compromising your grade. Deadline extensions may be available on certain assignments if requested at least 24 hours ahead of the deadline via email. If extended deadlines are not met, late penalties will be assessed based on the original, not the revised due date!

Academic Honesty and Plagiarism
This course follows the university's honesty policy regarding cheating, plagiarism, etc. Many students are unaware of the seriousness of violating academic ethics. **PLAGIARISM, WHETHER INTENTIONAL OR UNINTENTIONAL, IS A SERIOUS AND POTENTIALLY CAREER-ENDING FORM OF ACADEMIC MISCONDUCT. Copying and pasting from external sources without attribution is <u>never</u> okay in academia**. Direct quotes are not commonly used in science writing; paraphrases accompanied by a proper in-text citation should be used instead. Inappropriate use of direct quotes in this class will result in a loss of credit.

Artificial Intelligence (AI) Statement
Artificial Intelligence is an amazing new technology that is revolutionizing the way we access and process information, just like computers, the internet, and mobile phones did in prior decades. AI can be a useful tool to aid (but NOT replace) writers when brainstorming, spellchecking, and editing. **However, all work submitted for credit in this class must be your own. Using AI to generate *content* for you, including but not limited to copying & pasting AI output in whole or part into work submitted for this class** (even if you subsequently edit or paraphrase the AI output), **constitutes academic dishonesty unless explicitly permitted by the instructor as part of the written assignment instructions.**
If you use any AI application for any part of an assignment (including brainstorming ideas or editing), you must state so as part of your submission and include the entire prompt(s) that you used with the AI tool(s) as part of your submission (below your list of references); **failure to do so will be considered academic dishonesty**.

Students should be cognizant that large language models (LLMs) and similar AI applications are not credible sources and should not be used as such. They are also ill-suited for finding scholarly sources.
Further, many web sites, online services, and software packages (e.g. Grammarly, Canva, many word processors) now feature AI integrations. These policies apply to these services the same way that they do for LLMs. It is your responsibility to determine if any tools you use contain AI components, and if so, disclose use of that AI. AI-generated images may not be used unless expressly approved in writing by your instructor for a specific assignment.

Paper Guidelines
All writing assignments will be submitted to Canvas and must be in **.docx** format, with the proper file extension. Other file formats will not be accepted. All assignments must include citations and references in APA 7th edition formatting. You do not need cover pages, running headers, etc.
If you experience difficulties in the writing process are encouraged to contact your TA or me for advice or visit the UF Writing Studio (see *Campus Helping Resources* below).

Office Hours
Please take advantage of office hours to discuss any questions or concerns. Contact your teaching assistant for basic questions, help with assignments, and clarifications regarding grades and feedback. Contact me regarding absences, grading disputes, concerns about other students, and any other issues. If you cannot be present for the regularly scheduled office hours, we will attempt to accommodate you at an alternate time.

Course Communication
The preferred way to get ahold of me or your TA outside of drop-in office hours is via Canvas message or direct email from your official UF email account. You can expect a response within 24-48 hours on weekdays in most cases. Emails from outside providers, like Gmail, are not considered

secure and will be deleted to protect student privacy. Note that it is against FERPA best practices for me to discuss grades through email.

All students are expected to check the course web site on Canvas (https://elearning.ufl.edu) each weekday. In addition, we may send specific communications directly to your UF email, which you should check daily as well. You should enable Canvas notifications for this class, so that you are notified immediately about grading, assignment feedback, due date changes, announcements, etc.

External Communication
You may use GroupMe or similar tools to communicate with other students about the class and environmental science-related topics. **You may not, however, discuss quiz and exam questions/answers with others, including quizzes and exams from prior semesters, or collaborate on any assignments intended to be worked on individually. Doing so constitutes academic dishonesty.**

Canvas Display Name Change
Canvas uses the "Display Name" as set in myUFL. The Display Name is what you want people to see in the UF Directory, such as "Ally" instead of "Allison." To update your display name, go to one.ufl.edu, click on the dropdown at the top right, and select "Directory Profile." Click "Edit" on the right of the name panel, uncheck "Use my legal name" under "Display Name," update how you wish your name to be displayed, and click "Submit" at the bottom. This change may take up to 24 hours to appear in Canvas. This does not change your legal name for official UF records.

Technical Difficulties
For help with technical issues or difficulties with Canvas, please contact the UF Computing Help Desk at https://helpdesk.ufl.edu .
352-392-HELP (4357)
Walk-in: HUB 132

While technical difficulties are not generally an acceptable excuse, any requests for make-ups (assignments, exams, etc.) due to technical issues should be accompanied by the ticket number received from the UF Computing Help Desk when the problem was reported to them. The ticket number will document the time and date of the problem. You should email me within 24 hours of the technical difficulty if you wish to request a make-up.

Zoom Conference Privacy
Should it become necessary or convenient to hold classes virtually using zoom, those class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated. As in all courses, unauthorized sharing of recorded materials is prohibited.

Software Use
All UF faculty, staff and students are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties

for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources

Your wellbeing is important to me and the University of Florida community. If you experience a crisis or personal problem that interferes with your wellbeing, please utilize the university's counseling resources. You are, of course, always welcome and encouraged to talk to me about any issues that interfere with your academic performance and wellbeing.

Please visit https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/ for the latest information on academic and health & wellness resources, including the Whole Gator app

Critical Dates
(subject to change – please check the Canvas calendar for the latest information)

Course introduction	Monday, August 25
Labor Day Holiday – no class	***Monday, September 1***
Student presentations start	Wednesday, September 3
Seminar reflections due	Sunday, October 5
Exam 1 available	Monday, October 6
Exam 1 due	Friday, October 10
Thanksgiving Break – no class	***November 24 to 28***
Exam 2 available	Wednesday, December 3
Exam 2 due	Friday, December 12 @ 12:30pm

Course Alterations
Due to unforeseen circumstances or to enhance class learning opportunities, it may be necessary to alter the information given in this syllabus during the semester. Such changes are not unusual and should be expected. All changes to the syllabus will be announced in class and posted to Canvas. It is your responsibility to keep up with any syllabus changes.